UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,921	01/29/2004	Alexander T. Schwarm	007733 USA/FPS/MMCS/APC	2673

60397 7590 09/29/2006

(DC) WILMERHALE/APPLIED MATERIALS
THE WILLARD OFFICE BUILDING
1455 PENNSYLVANIA AVE. N.W.
WASHINGTON, DC 20004

EXAMINER	
SHECHTMAN, SEAN P	

ART UNIT	PAPER NUMBER
2125	

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/765,921	SCHWARM, ALEXANDER T.	
	Examiner	Art Unit	
	Sean P. Shechtman	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 December 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/16/04;8/11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS filed 10/8/04;12/7/04*.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, 2, 13, 15, 17, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 47, 40, 30 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 3,982,440 to Groleau et al (hereinafter referred to as Groleau).

Referring to claims 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, Groleau teaches monitoring performance of an advanced process control system for at least one static process output, comprising:

receiving process performance data for the at least one static process output (Col. 4, lines 10-14);

comparing the process performance data to at least one of a predicted value for the process performance and a target value for the process performance (Col. 22, lines 1-9);

calculating at least one index that reflects comparison of the process performance data to the at least one of the predicted value for the process performance and the target value for the process performance (Col. 22, lines 10-16); and

indicating the results of the calculation based on the at least one index, wherein the results indicate a status of the advanced process control system (Col. 11, lines 20-27).

calculating at least one of a model health index, wherein the model health index indicates an estimate of an ability of a model to predict the behavior of the at least one process output as compared to an expected output, and a process health index, wherein the process health index indicates an estimated probability of violation by the at least one process output of predefined specification limits (Col. 20, lines 15-37; Col. 20, lines 1-8); and

characterizing a current estimate of the process performance using at least one of a first index that represents the deviation of the process performance from the target process performance and a second index that represents the deviation of the model performance from a specified model performance; and performing a notification function based on the value of at least one of the first index and the second index (Col. 20, lines 1-8); and

if the current model health index is calculated, calculating a subsequent model health index, wherein the subsequent model health index indicates an estimate of an ability of a model to predict the behavior of a subsequent one of the at least one process output as compared to an expected output; if the subsequent model health index is calculated, storing the current model health index and the subsequent model health index, such that comparing the current model health index and the subsequent model health index give an indication of a processing performance of the at least one process output; if the current process health index is calculated, calculating a subsequent process health index, wherein the subsequent process health index indicates an estimated probability of violation by a subsequent one of the at least one process output of predefined specification limits; and if the subsequent process health index is calculated, storing the current process health index and the subsequent process health index, such that comparing the current process health index and the current process health index gives an

indication of the processing performance of the at least one process output (Col. 22, lines 10-16; Col. 20, lines 15-37; Col. 20, lines 1-8).

2, 13, 15, 17, 49, 42, 43, 44, 46, 34, 35, 36, 39. The method of claim 1, wherein the step of indicating the results of the calculation comprises at least one of sending an indication to a controller that the at least one index is beyond an acceptable point, halting processing of the at least one process output if the at least one index is beyond an acceptable point, and storing the at least one index as an indication of the processing performance of the at least one process output (Col. 11, lines 20-27).

4, 16, 18, 47, 40. The method of claim 5, further comprising the step of performing a notification function, wherein the notification function further comprises displaying the at least one of the model health index and the process health index in a visual display to allow a controller to assess the process performance of the at least one process output (Col. 11, lines 20-27).

30. The method of claim 28, further comprising: calculating at least one of an nth, where n is a number greater than three, model health index of a process performance of a nth one of the plurality of process outputs and a nth process health index of the process performance of the nth one of the plurality of process outputs; if the first model health index, the second model health index are calculated, and the nth model health index are calculated, calculating the aggregate model health index of the process performance of the plurality of process outputs; and if the first process health index, the second process health index, and the nth process health index are calculated, calculating the aggregate process health index of the process performance of the plurality of process outputs (Col. 20, lines 48-59; Col. 20, line 66 – Col. 21, line 2).

2. Claims 1, 5, 19, 26, 27, 28, 32, 33, 41, 48, 50-52, 53-61, 63-66, 2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 23, 25, 47, 40, 10, 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 6,389,331 to Jensen et al (hereinafter referred to as Jensen).

Referring to claim 1, 5, 19, 26, 27, 28, 32, 33, 41, 48, 50-52, 53-61, 63-66, Jensen teaches monitoring performance of an advanced process control system for at least one static process output, comprising:

receiving process performance data for the at least one static process output (Col. 3, lines 64 – Col. 4, lines 13);

comparing the process performance data to at least one of a predicted value for the process performance and a target value for the process performance; and calculating at least one index that reflects comparison of the process performance data to the at least one of the predicted value for the process performance and the target value for the process performance (Col. 4, line 5 – Col. 6, line 44); and

indicating the results of the calculation based on the at least one index, wherein the results indicate a status of the advanced process control system (Col. 6, lines 45-50; Col. 8, lines 18-29).

calculating at least one of a model health index, wherein the model health index indicates an estimate of an ability of a model to predict the behavior of the at least one process output as compared to an expected output, and a process health index, wherein the process health index

indicates an estimated probability of violation by the at least one process output of predefined specification limits (Col. 4, lines 14-60; Fig. 3); and

characterizing a current estimate of the process performance using at least one of a first index that represents the deviation of the process performance from the target process performance and a second index that represents the deviation of the model performance from a specified model performance; and performing a notification function based on the value of at least one of the first index and the second index (Col. 8, lines 10-29).

calculating at least one of a variance of a prediction error for a processing performance of the at least one process output and a probability for violating specification limits of the processing performance of the at least one process output, wherein the at least one of the variance and the probability are based on an exponentially weighted moving average (Col. 6, lines 45-56);

if the variance of the prediction error is calculated, calculating a model health index, wherein the model health index is a ratio of an exponentially weighted moving average-based estimate of a standard deviation of the prediction error to an expected estimate of the prediction error, and wherein the exponentially weighted moving average-based estimate of the standard deviation of the prediction error is derived from the variance of the prediction error; if the probability for violating specification limits is calculated, calculating a process health index, wherein the process health index is a ratio of the probability for violating the specification limits to a specified probability limit (Col. 4, lines 14-60); and

if the current model health index is calculated, calculating a subsequent model health index, wherein the subsequent model health index indicates an estimate of an ability of a model

to predict the behavior of a subsequent one of the at least one process output as compared to an expected output; if the subsequent model health index is calculated, storing the current model health index and the subsequent model health index, such that comparing the current model health index and the subsequent model health index give an indication of a processing performance of the at least one process output; if the current process health index is calculated, calculating a subsequent process health index, wherein the subsequent process health index indicates an estimated probability of violation by a subsequent one of the at least one process output of predefined specification limits; and if the subsequent process health index is calculated, storing the current process health index and the subsequent process health index, such that comparing the current process health index and the current process health index gives an indication of the processing performance of the at least one process output (Col. 8, lines 18-23).

2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39. The method of claim 1, wherein the step of indicating the results of the calculation comprises at least one of sending an indication to a controller that the at least one index is beyond an acceptable point, halting processing of the at least one process output if the at least one index is beyond an acceptable point, and storing the at least one index as an indication of the processing performance of the at least one process output (Col. 8, lines 17-29).

4, 16, 18, 23, 25, 47, 40. The method of claim 5, further comprising the step of performing a notification function, wherein the notification function further comprises displaying the at least one of the model health index and the process health index in a visual display to allow a controller to assess the process performance of the at least one process output (Col. 8, lines 17-29).

10. The method of claim 5, wherein the step of calculating the process health index further comprises the steps of: calculating a probability for violating specification limits of a processing performance of the at least one process output; and calculating a ratio of the probability for violating the specification limits to a specified probability limit (Col. 4, lines 14-60).

29. The method of claim 28, wherein the aggregate model health index is calculated using a geometric mean of the first model health index and the second model health index and the aggregate process health index is calculated using a geometric mean of the first process health index and the second process health index (Col. 7, lines 24-38).

30, 31. The method of claim 28, further comprising: calculating at least one of an nth, where n is a number greater than three, model health index of a process performance of a nth one of the plurality of process outputs and a nth process health index of the process performance of the nth one of the plurality of process outputs; if the first model health index, the second model health index are calculated, and the nth model health index are calculated, calculating the aggregate model health index of the process performance of the plurality of process outputs; and if the first process health index, the second process health index, and the nth process health index are calculated, calculating the aggregate process health index of the process performance of the plurality of process outputs; wherein the aggregate model health index is calculated using a geometric mean of the first model health index, the second model health index, and the nth model health index and the aggregate process health index is calculated using a geometric mean of the first process health index, the second process health index, and the nth process health index (Col. 7, line 24 – Col. 8, line 17).

3. Claims 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, 2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 23, 25, 47, 40, 10, 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 6,259,959 to Martin (hereinafter referred to as Martin).

Referring to claim 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, Martin teaches monitoring performance of an advanced process control system for at least one static process output, comprising:

receiving process performance data for the at least one static process output (Col. 2, lines 19-24; Fig. 2C);

comparing the process performance data to at least one of a predicted value for the process performance and a target value for the process performance; and calculating at least one index that reflects comparison of the process performance data to the at least one of the predicted value for the process performance and the target value for the process performance (Col. 2, lines 1-18; Fig. 11, Col. 9, lines 41-56; Col. 2, lines 8-10, work center X-factors); and

indicating the results of the calculation based on the at least one index, wherein the results indicate a status of the advanced process control system (Col. 1, lines 62 – Col. 2, line 18; Col. 6, lines 36-41).

calculating at least one of a model health index, wherein the model health index indicates an estimate of an ability of a model to predict the behavior of the at least one process output as compared to an expected output, and a process health index, wherein the process health index indicates an estimated probability of violation by the at least one process output of predefined

specification limits; and characterizing a current estimate of the process performance using at least one of a first index that represents the deviation of the process performance from the target process performance and a second index that represents the deviation of the model performance from a specified model performance; and performing a notification function based on the value of at least one of the first index and the second index (Col. 5, line 65 – Col. 6, line 25).

if the current model health index is calculated, calculating a subsequent model health index, wherein the subsequent model health index indicates an estimate of an ability of a model to predict the behavior of a subsequent one of the at least one process output as compared to an expected output; if the subsequent model health index is calculated, storing the current model health index and the subsequent model health index, such that comparing the current model health index and the subsequent model health index give an indication of a processing performance of the at least one process output; if the current process health index is calculated, calculating a subsequent process health index, wherein the subsequent process health index indicates an estimated probability of violation by a subsequent one of the at least one process output of predefined specification limits; and if the subsequent process health index is calculated, storing the current process health index and the subsequent process health index, such that comparing the current process health index and the current process health index gives an indication of the processing performance of the at least one process output (Figs. 3B and 4 ; Col. 2, lines 32-42; Col. 5, lines 10-24).

2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39. The method of claim 1, wherein the step of indicating the results of the calculation comprises at least one of sending an indication to a controller that the at least one index is beyond an acceptable point, halting

processing of the at least one process output if the at least one index is beyond an acceptable point, and storing the at least one index as an indication of the processing performance of the at least one process output (Col. 9, lines 2-13).

4, 16, 18, 23, 25, 47, 40. The method of claim 5, further comprising the step of performing a notification function, wherein the notification function further comprises displaying the at least one of the model health index and the process health index in a visual display to allow a controller to assess the process performance of the at least one process output (Col. 9, lines 40-55).

10. The method of claim 5, wherein the step of calculating the process health index further comprises the steps of: calculating a probability for violating specification limits of a processing performance of the at least one process output; and calculating a ratio of the probability for violating the specification limits to a specified probability limit (Col. 5, line 65 – Col. 6, line 25).

29. The method of claim 28, wherein the aggregate model health index is calculated using a geometric mean of the first model health index and the second model health index and the aggregate process health index is calculated using a geometric mean of the first process health index and the second process health index (Col. 10, lines 28-41).

30, 31. The method of claim 28, further comprising: calculating at least one of an nth, where n is a number greater than three, model health index of a process performance of a nth one of the plurality of process outputs and a nth process health index of the process performance of the nth one of the plurality of process outputs; if the first model health index, the second model health index are calculated, and the nth model health index are calculated, calculating the

aggregate model health index of the process performance of the plurality of process outputs; and if the first process health index, the second process health index, and the nth process health index are calculated, calculating the aggregate process health index of the process performance of the plurality of process outputs; wherein the aggregate model health index is calculated using a geometric mean of the first model health index, the second model health index, and the nth model health index and the aggregate process health index is calculated using a geometric mean of the first process health index, the second process health index, and the nth process health index (Figs. 3B and 4; Col. 2, lines 32-42; Col. 5, lines 10-24).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3, 14, 21, 45, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen as applied to claims 1, 5, 19, 26, 27, 28, 32, 33, 41, 48, 50-52, 53-61, 63-66, 2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 23, 25, 47, 40, 10, 29-31 above, and further in view of U.S. Pat. No. 5,548,535 to Zvonar (hereinafter referred to as Zvonar).

Referring to claims 3, 14, 21, 45, 37, 38, Jensen teaches all of the limitations set forth above, however fails to teach sending an indication to a controller further comprises sending at least one of a page, an electronic mail message, and a message to a wireless personal data assistant.

However, referring to claims 3, 14, 21, 45, 37, 38, Zvonar teaches analogous art, wherein sending an indication to a controller further comprises sending at least one of a page, an electronic mail message, and a message to a wireless personal data assistant (Col. 15, lines 45-48).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Zvonar with Jensen.

One of ordinary skill in the art would have been motivated to combine these references because Zvonar teaches sending a mail warning message to designated users a predetermined amount of time before a monitor item becomes due so that the recipient(s) can take steps to perform the monitor item by the due date (Abstract).

5. Claims 3, 14, 21, 45, 37, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin as applied to claims 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, 2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 23, 25, 47, 40, 10, 29-31 above, and further in view of Zvonar.

Referring to claims 3, 14, 21, 45, 37, 38, Martin teaches all of the limitations set forth above, however fails to teach sending an indication to a controller further comprises sending at least one of a page, an electronic mail message, and a message to a wireless personal data assistant.

However, referring to claims 3, 14, 21, 45, 37, 38, Zvonar teaches analogous art, wherein sending an indication to a controller further comprises sending at least one of a page, an

electronic mail message, and a message to a wireless personal data assistant (Col. 15, lines 45-48).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Zvonar with Martin.

One of ordinary skill in the art would have been motivated to combine these references because Zvonar teaches sending a mail warning message to designated users a predetermined amount of time before a monitor item becomes due so that the recipient(s) can take steps to perform the monitor item by the due date (Abstract).

6. Claims 6-9, 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin as applied to claims 1, 5, 26, 28, 32, 33, 41, 48, 50-52, 53, 54, 56, 58-60, 63, 65, 66, 2, 13, 15, 17, 20, 22, 24, 49, 42, 43, 44, 46, 34, 35, 36, 39, 4, 16, 18, 23, 25, 47, 40, 10, 29-31 above, and further in view of U.S. Pat. No. 5,841,676 to Ali et al (hereinafter referred to as Ali).

Referring to claims 6-9, 11-12, Martin teaches all of the limitations set forth above, however fails to teach the step of calculating the model health index further comprises the steps of: calculating a variance of a prediction error for a processing performance of the at least one process output; and calculating a ratio of an estimate of a standard deviation of the prediction error to an expected estimate of the prediction error, wherein the standard deviation of the prediction error is derived from the variance of the prediction error; wherein the variance of the prediction error indicates a bias between an actual output of the at least process output and the expected output; wherein the variance of the prediction error is based on an exponentially weighted moving average; wherein the estimate of the standard deviation of the prediction error

is based on an exponentially weighted moving average; wherein the step of calculating the process health index further comprises the step of calculating a variance of a target deviation for the processing performance of the at least one process output, wherein the variance of the target deviation indicates a bias between an actual output of the at least one process output and a target output; wherein the variance of the target deviation is based on an exponentially weighted moving average.

However, referring to claims 6-9, 11-12, Ali teaches analogous art, wherein calculating a model health index further comprises the steps of: calculating a variance of a prediction error for a processing performance of at least one process output; and calculating a ratio of an estimate of a standard deviation of the prediction error to an expected estimate of the prediction error, wherein the standard deviation of the prediction error is derived from the variance of the prediction error; wherein the variance of the prediction error indicates a bias between an actual output of the at least process output and the expected output; wherein the variance of the prediction error is based on an exponentially weighted moving average; wherein the estimate of the standard deviation of the prediction error is based on an exponentially weighted moving average; wherein the step of calculating the process health index further comprises the step of calculating a variance of a target deviation for the processing performance of the at least one process output, wherein the variance of the target deviation indicates a bias between an actual output of the at least one process output and a target output; wherein the variance of the target deviation is based on an exponentially weighted moving average (Col. 3, lines 28 – Col. 4, lines 65; Col. 5, line 35 – Col. 7, line 18).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to combine the teachings of Ali with Martin.

One of ordinary skill in the art would have been motivated to combine these references because Ali teaches a diagnostic analyzer that helps identify sources causing the control limit to be exceeded and provides a basis for selecting actions to correct the sources (Col. 2, lines 8-35).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571) 272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SPS

Sean P. Shechtman

September 21, 2006

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100